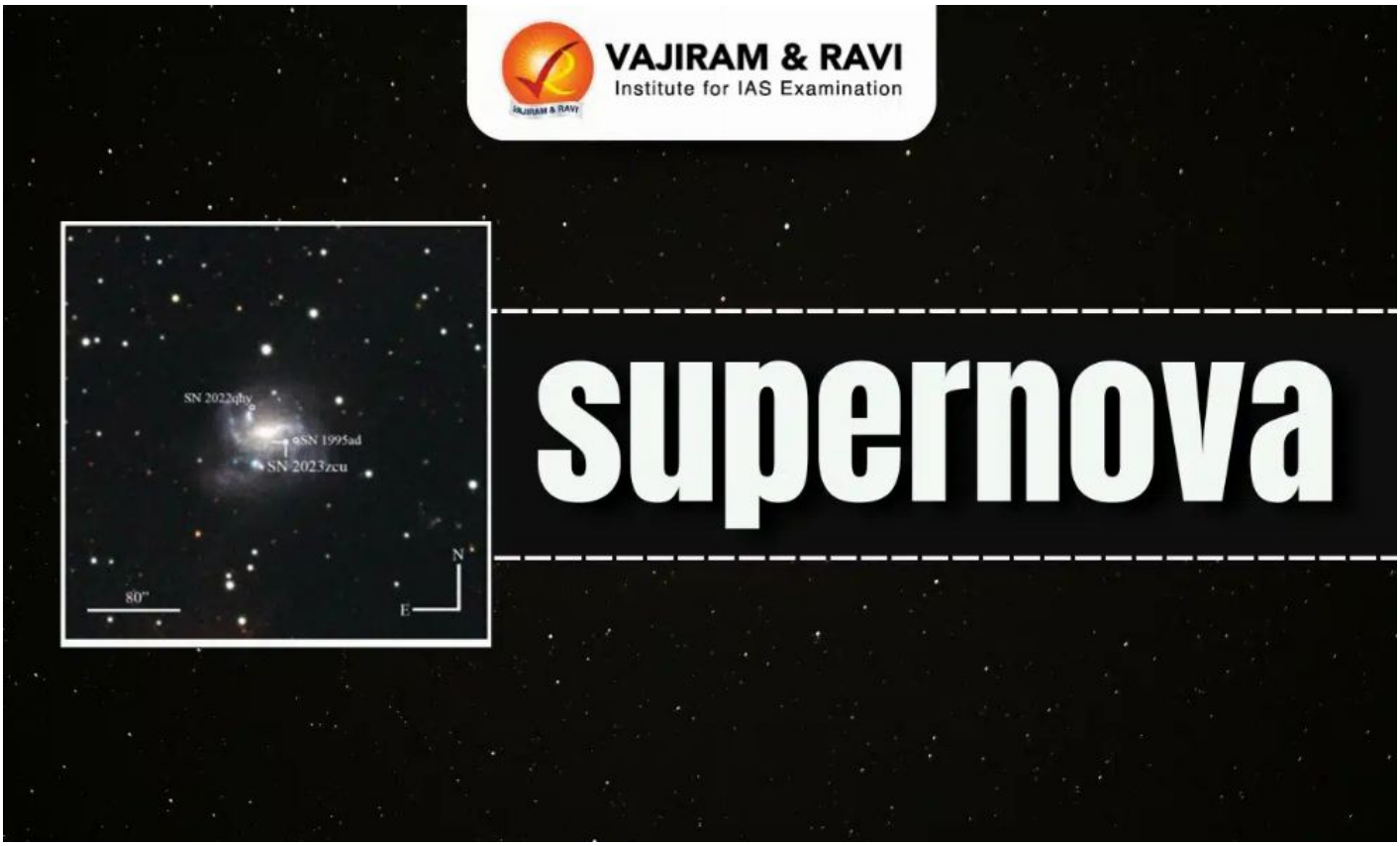
Supernova

June 13, 2026 • vajiramandravi.com



Supernova Latest News

According to a study led by Indian researchers, observations of a supernova discovered in a galaxy about 90.7 million light-years from Earth could help astronomers improve measurements of distances in the nearby universe.

About Supernova

- A supernova is the name given to the **cataclysmic explosion of a massive star.**
- Supernovae (SNe) are one of the most **violent explosions in the universe.**
- It can emit more energy in a few seconds than our sun will radiate in its lifetime of billions of years.
- These spectacular events can be so bright that they outshine their entire galaxies for a few days or even months.
- They’re also the **primary source of heavy elements in the universe.**

Types of Supernova

- **Core-collapse supernovae (CCSNe)**

- These are one of these cosmic fireworks occurring when a **massive star exhausts its nuclear fuel** and can no longer support itself against the gravitational pull.
- The most **common type of core-collapse supernova is Type IIP**, which happens when a massive red supergiant star (about 8–17 times the mass of the Sun) reaches the end of its life.
- **Process:** When the star's **core collapses into a proto-neutron star,** the outer material falls inward, then bounces back from the surface, **creating a powerful shock wave.**
- When the shock reaches the surface, the star's outer layers break away and expand into space.

- **Thermal runaway supernova**
  - It can occur when **two stars orbit each other**, and one or both of those stars is a white dwarf.
  - If the stars in one of these binary systems collide, or if one of the white dwarfs absorbs enough matter from the other star, the **white dwarf can become a supernova.**

Source: PIB
